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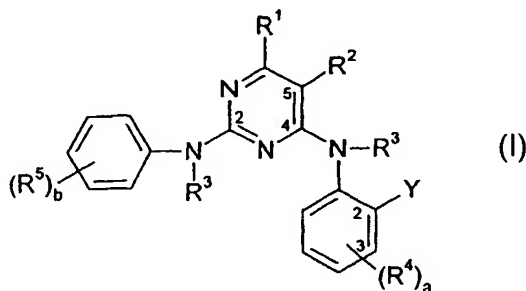
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- (74) Agents: LEVY, David, J. et al.; GlaxoSmithKline, Five Moore Drive, P.O. Box 13398, Research Triangle Park, NC 27709 (US).
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- (71) Applicant (for all designated States except US):
SMITHKLINE BEECHAM CORPORATION
[US/US]; One Franklin Plaza, Philadelphia, PA 19101 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): DAVIS-WARD, Ronda [US/US]; GlaxoSmithKline, Five Moore Drive, PO Box 13398, Research Triangle Park, NC 27709 (US). MOOK, Robert, Anthony, Jr. [US/US]; GlaxoSmithKline, Five Moore Drive, PO Box 13398, Research Triangle Park, NC (US). NEEB, Michael, J. [US/US]; GlaxoSmithKline, 709 Swedeland Road, King of Prussia, PA (US). SALOVICH, James, M. [US/US]; GlaxoSmithKline, Five Moore Drive, P.O. Box 13398, Research Triangle Park, NC 27709 (US).
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(54) Title: PYRIMIDINE COMPOUNDS



(57) Abstract: The present invention provides compounds of formula (I) : wherein all variables are as defined herein, pharmaceutical compositions containing the same, processes for preparing the same and their use as pharmaceutical agents.

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 C07D403/12 C07D239/48 C07D405/12 A61K31/505 A61K31/506 A61P35/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 C07D A61K Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, CHEM ABS Data, BEILSTEIN Data, WPI Data, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KARP, V. K. ET AL: "Synthesis and antiinflammatory properties of o-carboxyphenylaminopyrimidines" KHIMIKO-FARMATSEVTICHESKII ZHURNAL, 17(11), 1304-7 CODEN: KHIFZAN; ISSN: 0023-1134, 1983, XP009031557 see compound I8	1-43
P, X	WO 03/078404 A (NOVARTIS AG) 25 September 2003 (2003-09-25) see examples 117-121, 124-126, 233, formulae X12 and X13, Tables 12 and 14 and general formula ----- -/--	1-4, 6-9, 15-20, 22, 23, 26-34, 36-39, 41-43
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art *Z* document member of the same patent family		
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Scruton-Evans, I

INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 03/030909 A (BOYER STEPHEN ; CHEN JIANQING (US); CLARK ROGER B (US); FAN JIANMEI (U) 17 April 2003 (2003-04-17) see formula I, I-1, page 6, I-4, page 8, examples 181,257,258 and claims	1-43
Y	WO 00/39101 A (BREAULT GLORIA ANNE ; PEASE JANET ELIZABETH (GB); ASTRAZENECA UK LTD () 6 July 2000 (2000-07-06) see general formula, definitions of substituents on Q1 and formula Ia and pages 1-2	1-43
Y	WO 97/19065 A (CELLTECH THERAPEUTICS LTD ; DAVIS PETER DAVID (GB); MOFFAT DAVID FESTU) 29 May 1997 (1997-05-29) see general formula, definitions of X,R7 and R12 and examples 89->.	1-43
A	WO 00/27825 A (AKEN KOEN JEANNE ALFONS VAN ; KOYMANS LUCIEN MARIA HENRICUS (BE); HEER) 18 May 2000 (2000-05-18) see general formula and Table 2	1-43
P,Y	WO 03/032997 A (STEEGMAIER MARTIN ; KRIST BERND (AT); SPEVAK WALTER (AT); SCHOOP ANDRE) 24 April 2003 (2003-04-24) see general formula and page 2	1-43
Y	WO 01/64655 A (BREAULT GLORIA ANNE ; PEASE ELIZABETH JANET (GB); ASTRAZENECA UK LTD () 7 September 2001 (2001-09-07) see general formula, definitions of substituents on Q1 and of Y and Z, and examples 83-85	1-43
Y	WO 01/64654 A (BREAULT GLORIA ANNE ; PEASE ELIZABETH JANET (GB); ASTRAZENECA UK LTD () 7 September 2001 (2001-09-07) see general formula and examples 24,27,28	1-43
Y	WO 01/64656 A (PEARSON STUART ERIC ; PEASE ELIZABETH JANET (GB); ASTRAZENECA UK LTD () 7 September 2001 (2001-09-07) see general formula, pages 9/10 and claim 4	1-43
P,X	WO 03/063794 A (RIGEL PHARMACEUTICALS INC ; ROSSI ALEXANDER B (US); SYLVAIN CATHERINE) 7 August 2003 (2003-08-07) see general formula definitions and examples 7.3.43 and 7.3.189	1-4, 6-13,15, 16, 18-20, 22,23, 31-34

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/004197

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03078404	A	25-09-2003	WO 03078404 A1 25-09-2003
WO 03030909	A	17-04-2003	WO 03030909 A1 17-04-2003
WO 0039101	A	06-07-2000	AU 763091 B2 10-07-2003
			AU 1874300 A 31-07-2000
			BR 9916590 A 23-10-2001
			CA 2352896 A1 06-07-2000
			CN 1335838 T 13-02-2002
			EP 1140860 A1 10-10-2001
			WO 0039101 A1 06-07-2000
			JP 2002533446 T 08-10-2002
			NO 20013038 A 22-08-2001
			NZ 512118 A 29-08-2003
			US 6593326 B1 15-07-2003
			ZA 200104413 A 29-08-2002
WO 9719065	A	29-05-1997	AU 7631496 A 11-06-1997
			DE 69627179 D1 08-05-2003
			DE 69627179 T2 29-01-2004
			EP 0862560 A1 09-09-1998
			ES 2195020 T3 01-12-2003
			WO 9719065 A1 29-05-1997
			US 6235746 B1 22-05-2001
			US 5958935 A 28-09-1999
WO 0027825	A	18-05-2000	AT 233740 T 15-03-2003
			AU 762523 B2 26-06-2003
			AU 6200899 A 29-05-2000
			BG 105418 A 30-11-2001
			BR 9915552 A 14-08-2001
			CA 2350801 A1 18-05-2000
			CN 1322198 T 14-11-2001
			CZ 20011533 A3 17-10-2001
			DE 69905683 D1 10-04-2003
			DE 69905683 T2 18-03-2004
			DK 1002795 T3 30-06-2003
			EA 4049 B1 25-12-2003
			EE 200100252 A 15-10-2002
			WO 0027825 A1 18-05-2000
			EP 1270560 A1 02-01-2003
			EP 1002795 A1 24-05-2000
			ES 2193664 T3 01-11-2003
			HK 1025330 A1 13-06-2003
			HR 20010161 A1 28-02-2002
			HU 0104177 A2 28-03-2002
			ID 28376 A 17-05-2001
			JP 2002529456 T 10-09-2002
			NO 20011696 A 04-04-2001
			NZ 511116 A 29-08-2003
			PL 347586 A1 08-04-2002
			PT 1002795 T 31-07-2003
			SI 1002795 T1 31-10-2003
			SK 6032001 A3 07-01-2002
			TR 200101306 T2 22-10-2001
			US 2003114472 A1 19-06-2003
			US 2004039005 A1 26-02-2004
			ZA 200103769 A 12-08-2002

INTERNATIONAL SEARCH REPORT

 International Application No
 PCT/US2004/004197

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03032997	A	24-04-2003	WO 03032997 A1	24-04-2003
			US 2003171359 A1	11-09-2003
WO 0164655	A	07-09-2001	AU 771144 B2	11-03-2004
			AU 3397601 A	12-09-2001
			BR 0108834 A	10-12-2002
			CA 2398685 A1	07-09-2001
			CN 1406230 T	26-03-2003
			EP 1268444 A1	02-01-2003
			WO 0164655 A1	07-09-2001
			JP 2003525278 T	26-08-2003
			NO 20024153 A	29-10-2002
			US 2003149266 A1	07-08-2003
WO 0164654	A	07-09-2001	AU 765151 B2	11-09-2003
			AU 3395301 A	12-09-2001
			BR 0108841 A	06-05-2003
			CA 2399196 A1	07-09-2001
			CN 1406231 T	26-03-2003
			EP 1272477 A1	08-01-2003
			WO 0164654 A1	07-09-2001
			JP 2003525277 T	26-08-2003
			NO 20024154 A	28-10-2002
			US 2003149064 A1	07-08-2003
WO 0164656	A	07-09-2001	AU 3397901 A	12-09-2001
			BR 0108879 A	29-04-2003
			CA 2398887 A1	07-09-2001
			CN 1416423 T	07-05-2003
			EP 1278735 A1	29-01-2003
			WO 0164656 A1	07-09-2001
			JP 2003525279 T	26-08-2003
			NO 20024126 A	29-08-2002
WO 03063794	A	07-08-2003	WO 03063794 A2	07-08-2003
			US 2004029902 A1	12-02-2004
			WO 03063333 A1	31-07-2003
			WO 03061449 A1	31-07-2003
			WO 03063390 A2	31-07-2003
			WO 03063391 A2	31-07-2003
			US 2003137264 A1	24-07-2003
			US 2003137263 A1	24-07-2003
			US 2003142982 A1	31-07-2003
			US 2003170033 A1	11-09-2003
			WO 2004014382 A1	19-02-2004

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